



National Weather Service

Storm Data and Unusual Weather Phenomena



January 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Injured | Estimated Damage Property | Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------|---------------------------------|-------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------|---------------------------------|-------|--------------------|

WISCONSIN, Southeast

| | | | | | | | | | |
|--------------------------|---------------------------------|----------------|--|--|----------|----------|--|--|---------------------|
| WIZ062-067>068 | Iowa - Lafayette - Green | | | | | | | | |
| | 02 | 0700CST | | | 0 | 0 | | | Winter Storm |
| | | 2359CST | | | | | | | |

Specific snow accumulations: Darlington (Lafayette Co.) 16.5 inches, Monroe (Green Co.) 12.5, Dodgeville (Iowa Co.) 10.0 inches.

Additional details for this Winter Storm can be found in the narrative paragraphs associated with the 01/02/99 Blizzard over southeast Wisconsin during the 0900-2359CST timeframe.

| | | | | | | | | | |
|---|---|----------------|--|--|----------|----------|------------|--|-----------------|
| WIZ051>052-058>060-064>066-069>072 | Fond Du Lac - Sheboygan - Dodge - Washington - Ozaukee - Jefferson - Waukesha - Milwaukee - Rock - Walworth - Racine - Kenosha | | | | | | | | |
| | 02 | 0900CST | | | 0 | 5 | 11K | | Blizzard |
| | | 2359CST | | | | | | | |

A snarling, crippling winter storm/blizzard all but paralyzed southcentral and southeast Wisconsin, depositing 10 to 20.5 inches of snow, generating wind gusts to 45 to 63 mph, whipping up huge drifts of 4 to 8 feet in height, and causing numerous chain-reaction collisions of dozens of vehicles. For some locations, this storm was the worst since the famous January 1947 storm. Thanks to cold temperatures of 15 to 22 degrees, the snow was fluffy. Consequently, the horizontally moving snow was so dense that it looked like fog, as mentioned in the Milwaukee Journal-Sentinel newspaper. The Milwaukee Mitchell International Airport closed down at the height of the storm on Saturday, and Greyhound buses stopped running at 1030CST. Many flights at the Madison airport were canceled. As a result, roughly \$1.0 million in revenue was lost in the aviation community. Nearly all cities and villages declared a snow emergency to help snow plowing operations which were expected to total about \$1.0 million. Snowpiles eventually resembled small mountains.

Peak wind gusts from the east/northeast were generally around 39 knots (45 mph) west of a line from Fond du Lac to Janesville where Winter Storm conditions prevailed. Visibilities in the Winter Storm area were occasionally below 1/4 mile... but most of the time around 1/2 mile. East of this line peak gusts were 43 to 48 knots (50 to 55 mph), except for gusts to around 52 knots (60 mph) along the Lake Michigan shoreline. Port Washington (Ozaukee Co.) had the highest measured gust of 55 knots (63 mph). Blizzard conditions prevailed east of the Fond du Lac to Janesville line where visibilities were frequently 1/4 mile or less... and occasionally near zero.

There were 4 cases of frostbite treated at Milwaukee County hospitals. In addition, a man suffering from hypothermia was rescued from his garage in Wauwatosa. Otherwise, there were 4 indirectly-related deaths in Milwaukee County due to people suffering from heart attacks after shoveling snow.

In Waukesha County, about 60 vehicles were involved in a chain-reaction collision at 1400CST on I-94 near the Highway 18 exit due to near zero visibilities. There was one indirectly-related fatality in this accident. Elsewhere, a 51 vehicle pile up occurred at 0930CST on I-94 in Racine County. A 16 vehicle pile up was reported in Kenosha County on I-94 at 1330CST. Milwaukee County noted a 14 vehicle pile up near Mitchell Field at 1130CST. A driver in Kenosha County said it was like driving in a can of white paint. All together there were probably about 300 vehicle accidents in southcentral and southeast Wisconsin, resulting in at least 17 indirectly-related injuries.

Structural damage was reported in the city of Port Washington due to the strong winds. Two businesses noted damage to signs and roofs. In addition, a church had a stained glass window blown in. The wind also snapped some power lines, resulting in the loss of electrical service to about 5000 customers in the counties of Milwaukee, Racine, and Kenosha; and to about 2000 customers in Sheboygan county.

What made the winter storm/blizzard so different was the duration of blizzard-like conditions for 12 to 15 hours, while snowfall rates occasionally peaked at 1 to 1.5 inches per hour. Synoptically, the responsible low pressure eventually moved north/northeast through southeast Illinois, western Indiana, and then up along the eastern shoreline of Lake Michigan. Generally, a swath of 15 to 20 inches of accumulation extended from around West Bend (Washington Co.) to western Kenosha County. Elsewhere a band of 12 to 16 inches was observed from Lafayette County northeast through western Dane County to western Sheboygan County.

Specific snow accumulations in the blizzard area include...

- Washington County: 20.5 inches at Big Cedar Lake, 18.5 at West Bend, and 18.3 at Cedarburg
- Kenosha County: 19.0 inches at Wilmot, and 14 at Kenosha
- Waukesha County: 17.0 inches at Waukesha
- Milwaukee County: 16.7 inches at West Allis, and 15.4 inches at Mitchell Field
- Ozaukee County: 15 inches at Port Washington
- Sheboygan County: 15 inches at Sheboygan Falls, and 12.5 inches at Sheboygan
- Walworth County: 14.7 inches at Lake Geneva
- Jefferson County: 14.5 inches 4SSE of Sullivan, 14 inches at Watertown, 13.2 at Ft. Atkinson



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January 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | | Estimated Damage | | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|----------------------|---------|---------------------|-------|--------------------|
| | | | | | Killed | Injured | Property | Crops | |

WISCONSIN, Southeast

Racine County: 14 inches at Burlington, and 12 at Caledonia
 Fond du Lac County: 13.5 inches at Fond du Lac
 Rock County: 13 inches at Milton, 12.5 at Janesville, and 11.5 at Beloit.

WIZ046>047-056>057-063 Marquette - Green Lake - Sauk - Columbia - Dane
02 1000CST 0 0 Winter Storm
2359CST

Specific snowfall totals include...
 Columbia County: 16.0 inches at Wisconsin Dells, and 14 at Portage
 Dane County: 16.0 inches at Windsor, 14.1 at Cross Plains, 11.5 at Stoughton, and 10.8 at Madison Airport
 Marquette County: 13.1 inches at Oxford, and 11 at Montello
 Sauk County: 12 inches at Rock Springs
 Green Lake County: 10 inches at Green Lake

Additional details for this Winter Storm can be found in the narrative paragraphs associated with the 01/02/99 Blizzard over southeast Wisconsin during the 0900-2359 timeframe.

WIZ046>047-051>052-056>060-062>072 Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha
05 0000CST 0 0 Extreme Cold
1800CST

The combination of an arctic high pressure ridge, a fresh, deep snowcover, clear skies, and light winds allowed temperatures to plunge to well below zero across southcentral and southeast Wisconsin. Several new low temperatures records were set: -23 at Janesville (Rock Co.), breaking the old daily record of -19 set back in 1998, and -20 in the city of Kenosha.

Baraboo (Sauk Co.) was the coldest in the state with a -32, while Monroe (Green Co.) dropped to -26. Other observed minimums...Portage (Columbia Co.) -24, Stoughton (Dane Co.) -23, Ft. Atkinson (Jefferson Co.) -21, Germantown (Washington Co.) -21, Madison (Dane Co.) -20, Kenosha (Kenosha Co.) -20, Union Grove (Racine Co.) -20, Watertown and Lake Mills (Jefferson Co.) -20, Waukesha (Waukesha Co.) -19, Beloit (Rock Co.) -19, Wisconsin Dells (Columbia Co.) -17, Racine (Racine co.) -16, Fond du Lac (Fond du Lac co.) -15, and Milwaukee (Milwaukee Co.) -15

Thousands of calls to local AAA and car service centers were logged due to stalled vehicles. Maximum temperatures were only around zero. This was the coldest weather observed since February 1996 in southcentral and southeast Wisconsin.



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February 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Injured | Estimated Damage Property | Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------|---------------------------------|-------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------|---------------------------------|-------|--------------------|

WISCONSIN, Southeast

| | | | | | | | | | |
|---------------------------|--|-----------|----------------|--|----------|----------|--|--|-----------------------|
| WIZ051-063-066-069 | Fond Du Lac - Dane - Milwaukee - Rock | 11 | 1200CST | | 0 | 0 | | | Excessive Heat |
|---------------------------|--|-----------|----------------|--|----------|----------|--|--|-----------------------|

South winds pulled extremely warm, moist air north into southern Wisconsin ahead of a deep low pressure and strong cold front. The city of Milwaukee in Milwaukee County established a new all-time record maximum temperature of 68 degree, breaking the old record of 65 set back in 1976. A new daily record maximum was also established, with the old record of 60 set back in 1932. The city of Madison in Dane County established a new daily record maximum temperature of 61 degrees, breaking the old one being 54 set back in 1932. This narrowly missed the all-time February maximum of 63 set way back in 1882. Janesville in Rock County recorded a new daily maximum temperature of 66 degrees, breaking the old one of 51 set back in 1977. Up in Fond du Lac, a new all-time record maximum of 62 was recorded, breaking the old one of 58 set back in 1996 and 1932.

| | | | | | | | | | |
|------------------------------------|-----------|----------------|--|--|----------|----------|------------|--|--------------------------------|
| Lafayette County | | | | | | | | | |
| Shullsburg | 11 | 1240CST | | | 0 | 0 | 3K | | Thunderstorm Wind |
| Iowa County | | | | | | | | | |
| 2 SW Mineral Pt | 11 | 1243CST | | | 0 | 0 | | | Hail (1.75) |
| Sauk County | | | | | | | | | |
| Merrimac | 11 | 1331CST | | | 0 | 0 | | | Hail (1.00) |
| Marquette County | | | | | | | | | |
| Montello | 11 | 1345CST | | | 0 | 0 | | | Hail (0.75) |
| Dane County | | | | | | | | | |
| Madison | 11 | 1350CST | | | 0 | 0 | 1K | | Urban/Sml Stream Fld |
| 1530CST | | | | | | | | | |
| Dane County | | | | | | | | | |
| Belleville to Cottage Grove | 11 | 1355CST | | | 0 | 0 | 10K | | Thunderstorm Wind (G56) |
| 1410CST | | | | | | | | | |
| Columbia County | | | | | | | | | |
| Lodi | 11 | 1400CST | | | 0 | 0 | | | Hail (0.75) |
| Green County | | | | | | | | | |
| Albany to Brodhead | 11 | 1407CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Green Lake County | | | | | | | | | |
| 1 NE Princeton | 11 | 1407CST | | | 0 | 0 | | | Hail (0.75) |
| Rock County | | | | | | | | | |
| Janesville | 11 | 1417CST | | | 0 | 0 | | | Hail (0.75) |
| Jefferson County | | | | | | | | | |
| Lake Mills to Watertown | 11 | 1423CST | | | 0 | 0 | 1K | | Thunderstorm Wind (G56) |
| 1430CST | | | | | | | | | |
| Dodge County | | | | | | | | | |
| 3 N Beaver Dam | 11 | 1430CST | | | 0 | 0 | 10K | | Thunderstorm Wind |
| Milwaukee County | | | | | | | | | |
| Milwaukee | 11 | 1430CST | | | 0 | 0 | 1K | | Urban/Sml Stream Fld |
| 1700CST | | | | | | | | | |
| Rock County | | | | | | | | | |
| Janesville | 11 | 1430CST | | | 0 | 0 | 1K | | Lightning |
| Dodge County | | | | | | | | | |
| Juneau | 11 | 1440CST | | | 0 | 0 | | | Hail (0.75) |
| Walworth County | | | | | | | | | |
| 5 ESE Whitewater | 11 | 1440CST | | | 0 | 0 | 1K | | Thunderstorm Wind |



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| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Number of Persons Injured | Estimated Damage Property | Estimated Damage Crops | Character of Storm |
|------------------------------------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------|
| <u>WISCONSIN, Southeast</u> | | | | | | | | | |
| Jefferson County | | | | | | | | | |
| 1 S Palmyra | 11 | 1445CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Walworth County | | | | | | | | | |
| Walworth | 11 | 1445CST | | | 0 | 0 | 5K | | Thunderstorm Wind |
| Waukesha County | | | | | | | | | |
| Hartland to Elm Grove | 11 | 1445CST 1630CST | | | 0 | 0 | 1K | | Urban/Sml Stream Fld |
| Waukesha County | | | | | | | | | |
| Hartland to Brookfield | 11 | 1454CST 1505CST | | | 0 | 0 | 3K | | Thunderstorm Wind (G55) |
| Fond Du Lac County | | | | | | | | | |
| Fond Du Lac to Taycheedah | 11 | 1457CST 1505CST | | | 0 | 0 | 4K | | Thunderstorm Wind (G56) |
| Racine County | | | | | | | | | |
| Rochester to Racine | 11 | 1510CST 1525CST | | | 0 | 1 | 2K | | Thunderstorm Wind |
| Milwaukee County | | | | | | | | | |
| Milwaukee | 11 | 1515CST 1525CST | | | 0 | 3 | 25K | | Thunderstorm Wind (G61) |

Severe thunderstorms, ahead and along a strong cold front, struck parts of southcentral and southeast Wisconsin during the afternoon hours. The characteristic of the severe storms, extremely rare for February, transformed from large hail to damaging winds as clusters changed into short lines of storms moving rapidly east/northeast at 43 knots (50 mph), or more. All-time record February warmth (temperatures in the 60s) along with surface dewpoints in the 50s fueled the storms which also dumped rainfall amounts of 1/2 to 1 inch in 15 to 30 minutes. Thanks to the intense rainfall rate and still frozen ground, urban flooding was reported in Dane (a mudslide was reported on the UW-Madison campus), Waukesha, and Milwaukee counties. Hundreds of trees were uprooted. Probably 200 to 300 power poles toppled over due to powerful gusts to around 61 knots (70 mph), or were brought down by felled trees. In southcentral Wisconsin, 16,000 customers were without electrical power at one time or another, while about 4,000 customers in southeast Wisconsin lost power.

Near Shullsburg (Lafayette Co.), the winds destroyed a corn crib and scattered its remains across State Hwy 11. Also near Shullsburg, a large tree was pushed over on top of a pickup truck. Large trees were also uprooted in the Albany to Brodhead area of Green County. In Dane County, a wind damage swath extended from near Belleville northeast through southwest Madison to the east side of Madison around the Beltline. Trees and powerlines were pushed over in this area. The roof of a building on a golf driving range was ripped off, and sheet metal was torn off the siding of a couple other businesses in the Paoli area. East of Madison near Cottage Grove, a semi was blown over, allowing 100 gallons of fuel to spill on I-94.

In Janesville (Rock Co.), lightning struck a school building's chimney, resulting in damage, but luckily no fire. In Jefferson County, wind damage was noted from Lake Mills to Watertown. Besides many toppled trees, several construction sites in Watertown reported damage to scaffolding. Tree damage was also noted just south of Palmyra. In Walworth County, the powerful winds knocked over 2 construction trailers and 3 semi's near the village of Walworth. Large trees were also pushed over by the winds east/southeast of Whitwater.

The southern part of the city of Milwaukee in Milwaukee County was raked by powerful winds. Many trees and power poles were pushed over. A van was blown over, injuring two people. Also in Milwaukee, a woman was injured when the winds knocked her down. It was the nearly the same story in Cudahy which reported damage to several homes, businesses, and vehicles. In Racine County, the winds toppled trees and power lines in a swath from Rochester east to the city of Racine. In the city of Racine, a man was injured when a large tree branch knocked him out of his wheel chair.

Wind damage in Waukesha County occurred in the area from Hartland to Pewaukee. Besides damage to trees and powerline, a shed in Pewaukee was destroyed. The shed's wind-driven debris then damaged a nearby car. Further northwest in Dodge County, the powerful winds near Beaver Dam ripped off a barn's roof. In Fond du Lac county, the winds toppled trees and power poles/lines from Fond du Lac northeast to Taycheedah.



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February 1999

| Location | Date | Time | Path | Path | Number of | | Estimated | | Character of Storm |
|----------|------|--------------------|-------------------|------------------|-----------|---------|-----------|-------|--------------------|
| | | Local/ Standard | Length (Miles) | Width (Yards) | Killed | Injured | Property | Crops | |



National Weather Service

Storm Data and Unusual Weather Phenomena



March 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Number of Persons Injured | Estimated Damage Property | Estimated Damage Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|

WISCONSIN, Southeast

WIZ056-062-067 **Sauk - Iowa - Lafayette**

| | | | | | | | | | |
|-----------|----------------|--|--|--|----------|----------|--|--|---------------------|
| 08 | 1900CST | | | | 0 | 0 | | | Winter Storm |
|-----------|----------------|--|--|--|----------|----------|--|--|---------------------|

The combination of 4 to 6 inches of snow and strong winds resulted in a winter storm as defined by local criteria. Sustained winds speeds were 20 mph or more with gusts 35 mph. See narrative associated with the March 9, 1999 winter storm that affected southeast Wisconsin from 0200 to 1300CST for additional details.

WIZ046>047-057-063-068>069 **Marquette - Green Lake - Columbia - Dane - Green - Rock**

| | | | | | | | | | |
|-----------|----------------|--|--|--|----------|----------|--|--|---------------------|
| 08 | 2100CST | | | | 0 | 0 | | | Winter Storm |
|-----------|----------------|--|--|--|----------|----------|--|--|---------------------|

The combination of 4 to 6 inches of snow and strong winds resulted in a winter storm as defined by local criteria. Sustained winds speeds were 20 mph or more with gusts 35 mph. See narrative associated with the March 9, 1999 winter storm that affected southeast Wisconsin from 0200 to 1300CST for additional details.

WIZ051-058>059-064>065-070 **Fond Du Lac - Dodge - Washington - Jefferson - Waukesha - Walworth**

| | | | | | | | | | |
|-----------|----------------|--|--|--|----------|----------|--|--|---------------------|
| 09 | 0000CST | | | | 0 | 0 | | | Winter Storm |
|-----------|----------------|--|--|--|----------|----------|--|--|---------------------|

The combination of 3 to 6 inches of snow and strong winds resulted in a winter storm as defined by local criteria. Sustained winds speeds were 20 mph or more with gusts 35 mph. See narrative associated with the March 9, 1999 winter storm that affected southeast Wisconsin from 0200 to 1300CST for additional details.

WIZ052-060-066-071>072 **Sheboygan - Ozaukee - Milwaukee - Racine - Kenosha**

| | | | | | | | | | |
|-----------|----------------|--|--|--|----------|----------|--|--|---------------------|
| 09 | 0200CST | | | | 0 | 0 | | | Winter Storm |
|-----------|----------------|--|--|--|----------|----------|--|--|---------------------|

A winter storm affected southcentral and then southeast Wisconsin with a combination of snow, blowing and drifting snow, and poor visibilities. By Wisconsin standards, this storm was a minimal winter storm, but nonetheless resulted in numerous vehicle accidents and many vehicles in roadside ditches. By the time the storm ended, 3 to 6 inches of new snow had fallen over southcentral Wisconsin and 5 to 10.5 inches over southeastern Wisconsin. Sustained east-northeast winds were 17 knots (20 mph) or more, with gusts to 30 knots (35 mph) or more.

The snow began during the mid-afternoon hours on 03/08/99 over southcentral Wisconsin and in the early evening hours over the southeastern counties, however official winter storm conditions developed later once 3 inches of snow had accumulated. Visibilities due to blowing and drifting snow were occasionally down to 1/4 mile, or lower, especially in open areas. Waves built to 5 to 7 feet along the Lake Michigan shoreline where gusts to 35 knots (40 mph) were noted.

It appeared that Lake Michigan moisture enhanced snowfall totals in the higher terrain from western Sheboygan county down to southeastern Washington county, including eastern Fond du Lac county. Terrain in this area, where 9 to 10.5 inches was measured, is roughly 400-600 feet higher than Lake Michigan. The 10.5 inches was reported in Plymouth of western Sheboygan county. Other totals included: Sheboygan (6.0), West Bend (8.8), Port Washington (7.7), Random Lake (7), Milwaukee (7.6), Racine (7.0), Kenosha (8-9), 4SSE Sullivan in Jefferson county (5.0), Madison (5.8), Middleton (6.1), and Janesville-Beloit (4.0).

The responsible low pressure moved from Missouri to central Illinois to northern Kentucky

WIZ062-068 **Iowa - Green**

| | | | | | | | | | |
|-----------|----------------|--|--|--|----------|----------|-----------|--|------------------|
| 17 | 1615CST | | | | 0 | 0 | 5K | | High Wind |
|-----------|----------------|--|--|--|----------|----------|-----------|--|------------------|



National Weather Service

Storm Data and Unusual Weather Phenomena



March 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | | Estimated Damage | | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|----------------------|---------|---------------------|-------|--------------------|
| | | | | | Killed | Injured | Property | Crops | |

WISCONSIN, Southeast

Synoptic-scale high winds in the wake of a strong low pressure system raked southcentral Wisconsin. There were scattered reported of pushed over stop signs, trees, and street lights. It is estimated that winds gusts reached 60 mph.

WIZ046-063>064

Marquette - Dane - Jefferson

| | | | | | |
|----|--------------------|---|---|----|------------------|
| 17 | 1715CST 2030CST | 0 | 0 | 8K | High Wind |
|----|--------------------|---|---|----|------------------|

Synoptic-scale high winds in the wake of a strong low pressure system raked southern Wisconsin. The powerful winds knocked down stop signs around DeForest (Dane Co.), pushed over large trees around Oxford (Marquette Co.) and north of Palmyra (Jefferson Co.). In addition, a businesses siding was peeled off in Oxford. It is estimated that wind gusts reached 60 mph at those locations.

WIZ051-065

Fond Du Lac - Waukesha

| | | | | | |
|----|--------------------|---|---|----|------------------|
| 17 | 1830CST 2100CST | 0 | 0 | 4K | High Wind |
|----|--------------------|---|---|----|------------------|

Synoptic-scale high winds in the wake of a strong low pressure system raked southcentral Wisconsin. There were scattered reported of pushed over stop signs, trees, and street lights. It is estimated that winds gusts reached 60 mph. All other locations in southcentral and southeast Wisconsin had wind gusts in the 45 to 55 mph range.



National Weather Service

Storm Data and Unusual Weather Phenomena



April 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | | Estimated Damage | | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|----------------------|---------|---------------------|-------|--------------------|
| | | | | | Killed | Injured | Property | Crops | |

WISCONSIN, Southeast

| | | | | | | | | | |
|---------------------------|----|--------------------|--|--|---|---|--|--|----------------------|
| Dane County | | | | | | | | | |
| 3 N Mt Horeb to Mt Horeb | 03 | 0400CST 0800CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Kenosha County | | | | | | | | | |
| Countywide | 03 | 0400CST 0800CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Milwaukee County | | | | | | | | | |
| Wauwatosa | 03 | 0400CST 0800CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Racine County | | | | | | | | | |
| Countywide | 03 | 0400CST 0800CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Fond Du Lac County | | | | | | | | | |
| Ladoga | 03 | 0840CST | | | 0 | 0 | | | Hail (1.00) |
| Fond Du Lac County | | | | | | | | | |
| 4 SSE Brandon | 03 | 0900CST | | | 0 | 0 | | | Hail (1.00) |
| Fond Du Lac County | | | | | | | | | |
| Campbellsport | 03 | 0900CST | | | 0 | 0 | | | Hail (1.00) |
| Dodge County | | | | | | | | | |
| Iron Ridge | 03 | 1105CST | | | 0 | 0 | | | Hail (1.00) |

Scattered severe thunderstorms deposited large hail across parts of eastcentral Wisconsin. In addition, very heavy rains of 1 to 2 inches in the pre-dawn hours resulted in small stream and urban flooding in southcentral and southeast Wisconsin. In Dane county, a mudslide was reported about 3 miles north of Mt. Horeb at the intersection of Highway 78 and County Trunk J. In Racine and Kenosha counties, there were scattered reports of water over the roads in low spots both in urban areas and in the rural areas. In Milwaukee county urban flooding was reported in Wauwatosa and in the vicinity of the county zoo. Water depth on a couple roads in Wauwatosa reached 3 to 4 feet.

| | | | | | | | | | |
|--|----------|--------------------|--|--|---|---|-----|--|----------------------|
| Milwaukee County | | | | | | | | | |
| Milwaukee | 23 24 | 2200CST 1800CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Racine County | | | | | | | | | |
| Racine | 23 24 | 2200CST 1800CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Waukesha County | | | | | | | | | |
| Elm Grove | 23 24 | 2200CST 1800CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| WIZ064-067>068-072 | | | | | | | | | |
| Jefferson - Lafayette - Green - Kenosha | | | | | | | | | |
| | 23 24 | 2200CST 1800CST | | | 0 | 0 | 26K | | Flood |

Long duration showers and some thunderstorms dumped 2 to 3 inches of rain across parts of southcentral and southeast Wisconsin on top of a saturated ground. Urban flooding was reported in the city of Elm Grove in Waukesha county, in the city of Milwaukee, and in the city of Racine. Water depths reached 1 to 2 feet on low spots in roads, and there were some basement flooding reports. Some of the larger rivers exceeded flood stage in the counties of Jefferson, Lafayette, Green, and Kenosha. The Pecatonica River at Martintown in southwest Green county crested at 14.31 feet on the 24th (flood stage is 11 feet), and was above flood stage through the end of the month into May. The Fox River at New Munster in Kenosha county crested at 12.30 feet on the 25th (flood stage is 10 feet), and was above flood stage through the end of the month into May. The Pecatonica River at Blanchardville in northeast Lafayette county crested at 12.67 feet on the 24th (1.67 feet above flood stage). Damage near or along these rivers was limited to basement or garage contents. Most of the other larger rivers in southcentral and southeast Wisconsin managed to reach flood stage or rise about 1/2 to 1 foot above flood stage with only minor consequences.



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April 1999

| Location | Date | Time | Path | Path | Number of | | Estimated | | Character of Storm |
|----------|------|--------------------|-------------------|------------------|-----------|---------|-----------|-------|--------------------|
| | | Local/ Standard | Length (Miles) | Width (Yards) | Killed | Injured | Property | Crops | |



National Weather Service

Storm Data and Unusual Weather Phenomena



May 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Number of Persons Injured | Estimated Damage Property | Estimated Damage Crops | Character of Storm |
|------------------------------------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------|
| <u>WISCONSIN, Southeast</u> | | | | | | | | | |
| Iowa County 3 W Dodgeville | 16 | 1445CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Sauk County Reedsburg | 16 | 1520CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Iowa County Barneveld | 16 | 1530CST | | | 0 | 0 | | | Hail (1.00) |
| Dane County Blue Mounds | 16 | 1550CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Dane County Madison | 16 | 1612CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
| Dane County Madison | 16 | 1615CST | | | 0 | 0 | 150K | | Lightning |
| Jefferson County 2 S Lake Mills | 16 | 1638CST | | | 0 | 0 | | | Hail (1.00) |
| Waukesha County Brookfield | 16 | 1700CST 1900CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Rock County Evansville | 16 | 1715CST 1900CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Washington County West Bend | 16 | 1725CST | | | 0 | 0 | 4K | | Thunderstorm Wind (G52) |
| Ozaukee County Grafton | 16 | 1730CST 1830CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Racine County Waterford | 16 | 1735CST | | | 0 | 0 | | | Thunderstorm Wind (G56) |
| Walworth County Williams Bay | 16 | 1755CST | | | 0 | 0 | 3K | | Lightning |
| Walworth County Williams Bay | 16 | 1755CST | | | 0 | 0 | 3K | | Lightning |
| Milwaukee County Milwaukee | 16 | 1800CST | | | 0 | 0 | 4K | | Lightning |
| Milwaukee County Milwaukee | 16 | 1800CST | | | 0 | 0 | 4K | | Lightning |
| Kenosha County Wheatland | 16 | 1825CST | | | 0 | 0 | 38K | | Thunderstorm Wind |
| Kenosha County Kenosha | 16 | 1830CST 2000CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Milwaukee County Milwaukee | 16 | 1830CST 2100CST | | | 0 | 0 | 25K | | Flash Flood |
| Kenosha County 3 W Kenosha | 16 | 1855CST | | | 0 | 0 | 1K | | Hail (1.75) |
| Milwaukee County Oak Creek | 16 | 1855CST | | | 0 | 0 | 1K | | Thunderstorm Wind (G54) |
| Lafayette County 2 NE Benton | 16 | 2020CST | | | 0 | 0 | | | Hail (1.00) |



National Weather Service

Storm Data and Unusual Weather Phenomena



May 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | | Estimated Damage | | Character of Storm |
|------------------------------------|----------|----------------------------|---------------------------|--------------------------|----------------------|---------|---------------------|-------|-------------------------|
| | | | | | Killed | Injured | Property | Crops | |
| <u>WISCONSIN, Southeast</u> | | | | | | | | | |
| Iowa County | | | | | | | | | |
| 3 N Dodgeville | 16 | 2100CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Lafayette County | | | | | | | | | |
| South Wayne | 16 | 2122CST | | | 0 | 0 | | | Hail (1.00) |
| Iowa County | | | | | | | | | |
| Countywide | 16 | 2130CST 2359CST | | | 0 | 0 | 50K | | Flash Flood |
| Lafayette County | | | | | | | | | |
| South Portion | 16 | 2130CST 2359CST | | | 0 | 0 | 250K | 500K | Flash Flood |
| Dane County | | | | | | | | | |
| 2 WSW Oregon to Oregon | 16 17 | 2200CST 0100CST | | | 0 | 0 | 100K | | Flash Flood |
| Green County | | | | | | | | | |
| Countywide | 16 17 | 2245CST 0100CST | | | 0 | 0 | 120K | 600K | Flash Flood |
| Rock County | | | | | | | | | |
| Janesville | 16 | 2310CST | | | 0 | 0 | 40K | | Lightning |
| Rock County | | | | | | | | | |
| Janesville | 16 | 2310CST | | | 0 | 0 | 40K | | Lightning |
| Rock County | | | | | | | | | |
| 1 S Emerald Grove | 17 | 0007CST | | | 0 | 0 | 75K | | Thunderstorm Wind (G61) |
| Rock County | | | | | | | | | |
| Janesville | 17 | 0025CST | | | 0 | 0 | 175K | | Thunderstorm Wind |
| Dane County | | | | | | | | | |
| Madison | 17 | 0040CST | | | 0 | 0 | 110K | | Lightning |
| Walworth County | | | | | | | | | |
| Walworth to La Grange | 17 | 0040CST | | | 0 | 0 | 3K | | Thunderstorm Wind |
| Washington County | | | | | | | | | |
| West Bend | 17 | 0040CST | | | 0 | 1 | 35K | | Lightning |
| Waukesha County | | | | | | | | | |
| Oconomowoc | 17 | 0120CST | | | 0 | 0 | 2K | | Lightning |
| Milwaukee County | | | | | | | | | |
| Greenfield | 17 | 0130CST | | | 0 | 0 | 50K | | Lightning |
| Jefferson County | | | | | | | | | |
| Jefferson | 17 | 0200CST 0500CST | | | 0 | 0 | 30K | | Flash Flood |

Late afternoon thunderstorms rumbled across southern Wisconsin producing classic severe weather damage in many locations. There were numerous reports of wind damage to trees and power lines, large hail, and lightning. One injury was reported when lightning struck a man in Washington county in the city of West Bend. The havoc increased in intensity overnight, mainly in the form of flooding.

Several counties had urban/small stream flooding thanks to 2 to 3 inch rainfalls that left water 1 to 3 feet deep in low spots on roads and underpasses. But flash flooding also developed...with 5 to 7 inches measured in the southern third of Lafayette county during the overnight hours. Several Lafayette County roads had pavement and/or shoulder washouts, and several others were closed. The area around Oregon in Dane county received 4.8 inches in 6 hours, between 11pm and 5 am. Eighteen Oregon homes sustained damage, with 12 homes of them evacuated. There were some road washouts in the Oregon area due to flash flooding. In Green county the Sugar River at Brodhead rose 3.13 feet over the 5 foot flood stage, and was above flood stage through May 21st. The Pecatonica River near Martintown in southwest Green County rose 5.49 feet over its flood stage of 11 feet. It was above flood stage through the 26th of the month. In addition, 5 bridges were washed out near the city of Brooklyn. Rainfall amounts across Green County were in the 3 to 5 inch range. The city of Jefferson in Jefferson county measured 4.1 inches of rain in 2 hours, a 100 year rainfall for that location. The resultant flash flood damaged the interior and exterior of 5 schools which were all closed on the 17th. The southwest part of the city of Milwaukee experienced a flash flood that completely flooded underpasses, stalled dozens of vehicles, caused



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Storm Data and Unusual Weather Phenomena



May 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Injured | Property | Estimated Damage Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------|----------|------------------------------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------|----------|------------------------------|--------------------|

WISCONSIN, Southeast

hillside erosion, undermined some roads, and caused a 10 vehicle crash at the I-43 and Highway 100 intersection. Spotty, county-wide road washouts and severe erosion were noted in Iowa County due to local flash flooding in the wake of 3 to 5 inches of rain within 2 to 3 hours.

Along with the heavy rains a microburst with winds estimated at 70 mph caused minor damage to several homes near Emerald Grove (Rock Co.) and collapsed a farm outbuilding. Another downburst struck the south side of Janesville (Rock Co.), damaging the roofs of 3 businesses, flipping over 3 storage tanks, and overturning a semi truck. The powerful downburst winds which hit the Wheatland area (Kenosha Co.), damaged a school roof, and then damaged a roof and window of a home across the street.

Lightning in the Madison area (Dane Co.) resulted in one serious home fire, and damage to 5 vehicles at a car dealership. Four Milwaukee (Milwaukee Co.) homes were struck by lightning and experienced minor fires. In the city of Janesville, lightning started a fire in an apartment building. In West Bend (Washington Co.) lightning struck a home under construction, resulting in a significant fire. There were other scattered reports of lightning striking homes or businesses, resulting in minor fires. At one time or another, about 13,000 electrical customers in southcentral and southeast Wisconsin were without power due to lightning striking lines or transformers.



National Weather Service

Storm Data and Unusual Weather Phenomena



June 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | | Estimated Damage | | Character of Storm |
|--|------|----------------------------|---------------------------|--------------------------|----------------------|---------|---------------------|-------|-------------------------|
| | | | | | Killed | Injured | Property | Crops | |
| <u>WISCONSIN, Southeast</u> | | | | | | | | | |
| Dane County Mendota | 06 | 1355CST | | | 0 | 0 | | | Hail (1.00) |
| Rock County Evansville | 06 | 1426CST | | | 0 | 0 | | | Hail (0.75) |
| Rock County 1 S Hanover | 06 | 1440CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Green County Monroe | 06 | 1445CST | | | 0 | 0 | 2K | | Thunderstorm Wind (G61) |
| Rock County 2 W Orfordville | 06 | 1445CST | | | 0 | 0 | | | Funnel Cloud |
| Green County 7 ENE Dayton | 06 | 1447CST | | | 0 | 0 | | | Funnel Cloud |
| Columbia County Fall River | 06 | 1450CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Rock County Orfordville | 06 | 1451CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
| Green County 5 E Juda | 06 | 1455CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Rock County Evansville to Milton | 06 | 1456CST 1502CST | | | 0 | 2 | 3K | | Thunderstorm Wind (G65) |
| Sauk County Lake Delton | 06 | 1500CST 1505CST | | | 0 | 0 | 10K | | Thunderstorm Wind |
| Jefferson County Lake Mills | 06 | 1505CST | | | 0 | 0 | | | Thunderstorm Wind (G50) |
| Rock County 4 S Afton | 06 | 1505CST | | | 0 | 0 | 10K | | Thunderstorm Wind |
| Sauk County Lake Delton | 06 | 1505CST | | | 0 | 1 | | | Lightning |
| Columbia County Wisconsin Dells | 06 | 1508CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
| Dane County 4 SE Utica to Albion | 06 | 1508CST | | | 0 | 0 | 2K | | Hail (1.75) |
| Walworth County 3 NW Darien to Millard | 06 | 1508CST | | | 0 | 0 | 5K | | Thunderstorm Wind |
| Columbia County Arlington | 06 | 1518CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Columbia County Columbus | 06 | 1525CST | | | 0 | 0 | 3K | | Thunderstorm Wind |
| Dodge County 2 NW Watertown | 06 | 1525CST | | | 0 | 0 | | | Hail (0.75) |
| Jefferson County Lake Mills | 06 | 1525CST | 0.1 | 30 | 0 | 0 | 3K | | Tornado (F0) |
| Jefferson County Hebron to 5 NE Hebron | 06 | 1530CST 1535CST | | | 0 | 0 | 30K | | Thunderstorm Wind |



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Storm Data and Unusual Weather Phenomena



June 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | | Estimated Damage | | Character of Storm |
|---|------|----------------------------|---------------------------|--------------------------|----------------------|---------|---------------------|-------|-------------------------|
| | | | | | Killed | Injured | Property | Crops | |
| <u>WISCONSIN, Southeast</u> | | | | | | | | | |
| Waukesha County 3.5 W Mukwonago to Hartland | 06 | 1532CST 1547CST | | | 0 | 0 | 40K | | Thunderstorm Wind (G70) |
| Walworth County 1 NW East Troy | 06 | 1535CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Washington County 6 S Hartford | 06 | 1540CST | | | 0 | 0 | 1K | | Thunderstorm Wind (G50) |
| Dodge County Beaver Dam | 06 | 1544CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Fond Du Lac County Fond Du Lac | 06 | 1544CST | | | 0 | 1 | | | Lightning |
| Fond Du Lac County Fond Du Lac | 06 | 1544CST | | | 0 | 0 | 3K | | Thunderstorm Wind (G60) |
| Waukesha County 3.9 NW Big Bend | 06 | 1545CST | 0.2 | 40 | 0 | 0 | 100K | | Tornado (F1) |
| Dodge County 2 NW Watertown | 06 | 1547CST | | | 0 | 0 | | | Hail (0.75) |
| Walworth County Elkhorn to Lake Geneva | 06 | 1547CST 1555CST | | | 0 | 0 | 8K | | Thunderstorm Wind |
| Dodge County Hustisford to Theresa | 06 | 1554CST 1558CST | | | 0 | 0 | 5K | | Thunderstorm Wind |
| Jefferson County 3 S Sullivan | 06 | 1555CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Kenosha County Twin Lakes | 06 | 1555CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Racine County Burlington | 06 | 1555CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Kenosha County Salem | 06 | 1557CST | | | 0 | 0 | | | Funnel Cloud |
| Washington County West Bend to Germantown | 06 | 1600CST 1610CST | | | 0 | 0 | 10K | | Thunderstorm Wind (G61) |
| Ozaukee County Mequon to Saukville | 06 | 1605CST 1615CST | | | 0 | 0 | 3K | | Thunderstorm Wind |
| Waukesha County Brookfield | 06 | 1605CST | | | 0 | 0 | 15K | | Thunderstorm Wind |
| Dodge County 2 E Juneau | 06 | 1614CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Ozaukee County 3 N Belgium | 06 | 1623CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Racine County 2 W Caledonia | 06 | 1630CST | | | 0 | 0 | 5K | | Thunderstorm Wind |
| Milwaukee County Milwaukee | 06 | 1634CST | | | 0 | 0 | 200K | | Thunderstorm Wind |
| Sheboygan County Cedar Grove | 06 | 1638CST | | | 0 | 0 | 10K | | Thunderstorm Wind |



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Storm Data and Unusual Weather Phenomena



June 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Injured | Estimated Damage Property | Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------|---------------------------------|-------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------|---------------------------------|-------|--------------------|

WISCONSIN, Southeast

Washington County

| | | | | | | | | | |
|----------------|----|---------|--|--|---|---|----|--|-------------|
| 3 NE West Bend | 06 | 2200CST | | | 0 | 0 | 3K | | Hail (1.00) |
|----------------|----|---------|--|--|---|---|----|--|-------------|

Dane County

| | | | | | | | | | |
|---------|----|---------|--|--|---|---|----|--|-------------------|
| Madison | 06 | 2230CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
|---------|----|---------|--|--|---|---|----|--|-------------------|

A significant change in the upper level pattern to a more southwesterly flow allowed tropical-like moisture to return to southern Wisconsin in conjunction with an upper level shortwave trough. The result was the first severe weather outbreak across southern Wisconsin since May 16, 1999. A series of upper level shortwaves continued to move through the Great Lakes region during the remainder of the week into the weekend of June 12-13, 1999. These shortwaves resulted in additional rounds of severe weather across southcentral and southeast Wisconsin.

On June 6th, scattered severe storms eventually became orientated in short lines that produced 2 tornadoes, 10 gustnadoes (classified as thunderstorm wind damage), 3 funnel clouds, hail up to the size of golfballs, damaging straight-line downburst winds up to 80 mph, and isolated torrential rainfalls of around 1 inch within 20 to 30 minutes. In Evansville (Rock Co.), 1/2 inch rain fell within 10 minutes along with large hail. In addition, two people were injured by lightning strikes. Otherwise, numerous large trees and power lines were toppled by the powerful thunderstorm winds.

A weak (F0) tornado briefly touched down on the northwest side of Lake Mills (the body of water), Jefferson County, uprooting and snapping large trees, but not causing any other damage. Another weak (F1) tornado spun up just southwest of the intersection of Oakdale and Skyline roads northwest of Big Bend (Waukesha Co.), damaging 6 homes (one had major damage), and 2 pole sheds. This Waukesha tornado was on the ground for about 2/10 of a mile, and weakened after it crossed Oakdale Rd.

Most interestingly, the number of gustnadoes reported and verified was the greatest in recent memory. A couple of them were captured on video tape. Several of them resulted in tree damage, and all ten were classified as thunderstorm wind damage. Locations of gustnadoes were: 1) Rock county...Orfordville; Walworth County...3NW Darien, 1W Delevan, Millard, and 1NW East Troy; Waukesha County...3.5W Muckwonago, 1WNW North Prairie, and 2 of them 2SW Harland; Washington County...3SW West Bend on Little Cedar Lake. The Little Cedar Lake gustnado actually spun up on the water surface (gustspout!?!?) and then moved onshore, damaging a pier and uprooting a couple trees before dissipating. It was observed by a trained spotter. Another trained spotter found themselves briefly inside one of the gustnadoes southwest of Hartland! The fact that so many gustnadoes were plainly visible can be partially attributed to significant amounts of dust and dirt that were picked up off nearby farm fields. This was made possible by dry weather during the preceding 3 weeks coupled with late planting (little vegetation) of some fields.

Other notable damage reports included: a motorhome was blown onto State Highway 14 near Evansville (Rock Co.), injuring two people; a home in Hebron (Jefferson Co.) was damaged by a wind-toppled tree, while northeast of Hebron a barn was damaged by fallen trees; a pontoon boat was blown 500 feet near Elkhorn (Walworth Co.); a construction trailer west/northwest of North Prairie (Waukesha Co.) was rolled over and damaged by a gustnado; in Brookfield (Waukesha Co.) a construction trailer was damaged after strong thunderstorm winds flipped it over, while elsewhere in Brookfield a toppled tree damaged a home; in Germantown (Washington Co.)... a home had its gutters and shingles damaged while one of its windows was blown in; just west of Cladenio (Racine Co.) a truck was flipped over by strong thunderstorm winds, and a four block area on Milwaukee's west side suffered an intense wet microburst that damaged 14 homes, 17 vehicles, uprooted 100 trees, and knocked over a few power lines.



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Storm Data and Unusual Weather Phenomena



June 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | | Estimated Damage | | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|----------------------|---------|---------------------|-------|--------------------|
| | | | | | Killed | Injured | Property | Crops | |

WISCONSIN, Southeast

| | | | | | | | | | |
|---------------------------------|----|--------------------|--|--|---|---|-----|--|-------------------------|
| Sauk County | | | | | | | | | |
| Lake Delton | 08 | 1615CST 1700CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Iowa County | | | | | | | | | |
| 4 SW Dodgeville | 08 | 1644CST | | | 0 | 0 | | | Hail (1.00) |
| Marquette County | | | | | | | | | |
| 3 N Briggsville | 08 | 1650CST | | | 0 | 0 | | | Hail (0.75) |
| Columbia County | | | | | | | | | |
| Portage | 08 | 1720CST | | | 0 | 0 | | | Hail (0.75) |
| Dane County | | | | | | | | | |
| 3 S Black Earth to Fitchburg | 08 | 1720CST 1725CST | | | 0 | 0 | 3K | | Thunderstorm Wind (G56) |
| Sauk County | | | | | | | | | |
| Leland | 08 | 1735CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Columbia County | | | | | | | | | |
| Portage | 08 | 1738CST | | | 0 | 0 | | | Hail (0.75) |
| Green Lake County | | | | | | | | | |
| Markesan | 08 | 1743CST | | | 0 | 0 | | | Hail (0.75) |
| Fond Du Lac County | | | | | | | | | |
| 2 S Ripon | 08 | 1800CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Sauk County | | | | | | | | | |
| Baraboo | 08 | 1800CST 1930CST | | | 0 | 0 | 10K | | Flash Flood |
| Dodge County | | | | | | | | | |
| Lowell to Juneau | 08 | 1821CST 1835CST | | | 0 | 0 | 30K | | Hail (1.00) |

The second round (June 8th) of severe weather across southcentral and southeast Wisconsin during the week wasn't as widespread as that on June 6th. Nonetheless, there were scattered clusters of severe storms that dumped large hail and/or generated strong downburst winds that toppled large trees and powerlines. Large hail damaged 20 vehicles and stripped several trees clean from Lowell to Juneau (Dodge Co.). In addition, torrential rains resulted in isolated flash flooding or urban/small stream flooding. Flash flooding (soil erosion and gravel shoulder washouts) occurred in Baraboo (Sauk Co.) after 3/4 inch of rain fell in 20 minutes on top of a saturated ground. Water levels on some streets reach 1 to 3 feet in depth.

| | | | | | | | | | |
|--------------------------|----|---------|--|--|---|---|-----|--|-------------------|
| Sheboygan County | | | | | | | | | |
| 4 N Kohler | 10 | 0900CST | | | 0 | 0 | | | Hail (1.00) |
| Washington County | | | | | | | | | |
| Hartford | 10 | 1244CST | | | 0 | 0 | | | Funnel Cloud |
| Washington County | | | | | | | | | |
| 2 NE Hartford | 10 | 1250CST | | | 0 | 0 | | | Hail (0.75) |
| Sauk County | | | | | | | | | |
| North Freedom | 10 | 1310CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Walworth County | | | | | | | | | |
| Elkhorn | 10 | 1336CST | | | 0 | 0 | 15K | | Thunderstorm Wind |
| Walworth County | | | | | | | | | |
| Elkhorn | 10 | 1340CST | | | 0 | 3 | | | Lightning |
| Washington County | | | | | | | | | |
| West Bend | 10 | 1345CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Racine County | | | | | | | | | |
| Burlington | 10 | 1403CST | | | 0 | 0 | 1K | | Thunderstorm Wind |



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Storm Data and Unusual Weather Phenomena



June 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Injured | Estimated Damage Property | Crops | Character of Storm |
|------------------------------------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------|---------------------------------|-------|-------------------------|
| <u>WISCONSIN, Southeast</u> | | | | | | | | | |
| Jefferson County | | | | | | | | | |
| Concord | 10 | 1415CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Washington County | | | | | | | | | |
| West Bend to Germantown | 10 | 1420CST 1440CST | | | 0 | 0 | 3K | | Thunderstorm Wind (G52) |
| Waukesha County | | | | | | | | | |
| Oconomowoc | 10 | 1425CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Milwaukee County | | | | | | | | | |
| Milwaukee | 10 | 1430CST 1700CST | | | 0 | 0 | 75K | | Flash Flood |
| Sauk County | | | | | | | | | |
| Leland | 10 | 1430CST 1600CST | | | 0 | 0 | 20K | | Flash Flood |
| Walworth County | | | | | | | | | |
| 3 S Whitewater | 10 | 1440CST | | | 0 | 0 | | | Hail (0.75) |
| Waukesha County | | | | | | | | | |
| Waukesha | 10 | 1445CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Ozaukee County | | | | | | | | | |
| Fredonia | 10 | 1500CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Waukesha County | | | | | | | | | |
| Waukesha | 10 | 1505CST 1510CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Walworth County | | | | | | | | | |
| Delavan | 10 | 1545CST 1600CST | | | 0 | 1 | 10K | | Thunderstorm Wind |
| Walworth County | | | | | | | | | |
| Fontana | 10 | 1555CST | | | 0 | 0 | | | Funnel Cloud |
| Columbia County | | | | | | | | | |
| Columbus | 10 | 1630CST 1800CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Fond Du Lac County | | | | | | | | | |
| 2 N Ladoga | 10 | 1630CST 1800CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Dane County | | | | | | | | | |
| 1 E East Bristol | 10 | 1650CST | | | 0 | 0 | 200K | | Thunderstorm Wind |
| Dodge County | | | | | | | | | |
| 2 W Beaver Dam | 10 | 1700CST 1800CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
| Columbia County | | | | | | | | | |
| Fall River to Columbus | 10 | 1706CST 1710CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
| Columbia County | | | | | | | | | |
| 1 NW Columbus | 10 | 1728CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Walworth County | | | | | | | | | |
| 3 SE Lake Geneva | 10 | 1728CST | | | 0 | 0 | 1K | | Thunderstorm Wind |

The 3rd round (June 10th) of severe weather during the week was more widespread than the 2nd round. The usual large hail and/or damaging thunderstorm wind reports were common (large trees knocked over), as well as isolated flash flooding or urban/small stream flooding. In addition, 3 people were injured in Elkhorn (Walworth Co.) when lightning struck nearby. Torrential rains of 1 to 2 inches within 1 to 2 hours, on top of saturated soil, hit the Rock Springs to Leland area in Sauk County. A road near Leland was washed out by the flood waters. Excessive rainfall also generated urban-type flooding in the Columbus (Columbia Co.) area in which water was 4 to 6 inches deep on some roads. Just west of Beaver Dam (Dodge Co.), 2.5 inches of rain fell in only 45 minutes, resulting in urban-type flooding. Water levels on some roads ranged from 6 inches to 1 foot. Flash flooding hit the south side of the city of Milwaukee (Milwaukee Co.) after 2 to 3 inches of rain fell within 1.5 hours. Several cars were reported to be "floating" down the streets and some were flipped over. Urban/small stream flooding occurred north of Ladoga (Fond du Lac Co.)



National Weather Service

Storm Data and Unusual Weather Phenomena



June 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | Estimated Damage | Character of Storm | |
|----------|------|----------------------------|---------------------------|--------------------------|----------------------|---------------------|--------------------|-------|
| | | | | | Killed | Injured | Property | Crops |

WISCONSIN, Southeast

The Fox River in western Racine and western Kenosha County flooded at levels not seen for 12 years. Seventy-five homes were evacuated in the villages Salem, Silver Lake, and Wheatland in Kenosha County. Many cars stalled in rushing water that reached a depth of 3 to 4 feet on some roads. Several roads were closed, and some residents had to be rescued from their homes because the water was rising 1 inch per hour on the Fox River. In Burlington (Racine Co.), all city parks were completely flooded, and serious soil erosion in a couple new housing developments was noted. Due to the heavy rains in the Fox River watershed, the Fox River at New Munster (Kenosha Co.) eventually crested at 13.68 feet at 0215CST on June 15th, or 3.68 feet over flood stage. The flooding was characterized as "moderate." The river at this location was above flood stage from 1700CST on June 12th through 1700CST on June 22nd.

| | | | | | | | | |
|---|----|--------------------|--|--|---|---|-----|--------------------------------|
| Fond Du Lac County | | | | | | | | |
| 3 WNW Pipe | 16 | 1357CST | | | 0 | 0 | | Funnel Cloud |
| Fond Du Lac County | | | | | | | | |
| Pipe | 16 | 1402CST | | | 0 | 0 | | Hail (0.75) |
| An isolated thunderstorm, embedded in a cluster of showers, moved southeast at 25 mph, dumped heavy rains, and produced 3/4 inch diameter hail and 40 knot winds in Pipe. The storm was low-topped, only reaching about 25,000 feet (cold air aloft). | | | | | | | | |
| Racine County | | | | | | | | |
| Ives Grove | 22 | 1600CST | | | 0 | 0 | 15K | Lightning |
| Lightning struck the Racine Co. Public Works building, resulting in the damage to the lighting system, and personal computers | | | | | | | | |
| Kenosha County | | | | | | | | |
| Silver Lake | 28 | 0000CST 0200CST | | | 0 | 0 | | Urban/Sml Stream Fld |
| Rock County | | | | | | | | |
| Janesville | 28 | 0000CST 0200CST | | | 0 | 0 | | Urban/Sml Stream Fld |
| Walworth County | | | | | | | | |
| Delavan | 28 | 0000CST 0200CST | | | 0 | 0 | | Urban/Sml Stream Fld |
| Dane County | | | | | | | | |
| Madison | 28 | 1300CST 1500CST | | | 0 | 0 | | Urban/Sml Stream Fld |
| Dane County | | | | | | | | |
| Marshall | 28 | 1300CST 1500CST | | | 0 | 0 | | Urban/Sml Stream Fld |
| Dane County | | | | | | | | |
| Middleton to Madison | 28 | 1325CST 1335CST | | | 0 | 0 | | Hail (0.75) |
| Jefferson County | | | | | | | | |
| 1 W Waterloo | 28 | 1425CST | | | 0 | 0 | | Hail (0.75) |
| Dodge County | | | | | | | | |
| 2 N Watertown | 28 | 1500CST | | | 0 | 0 | | Hail (1.00) |
| Jefferson County | | | | | | | | |
| 3 SE Sullivan | 28 | 1503CST | | | 0 | 0 | | Hail (0.88) |
| Marquette County | | | | | | | | |
| Packwaukee | 28 | 1510CST | | | 0 | 0 | 2K | Thunderstorm Wind (G52) |
| Waukesha County | | | | | | | | |
| 4 SW Dousman | 28 | 1510CST | | | 0 | 0 | | Hail (0.75) |
| Marquette County | | | | | | | | |
| 4 E Montello | 28 | 1520CST | | | 0 | 0 | | Hail (0.75) |
| Milwaukee County | | | | | | | | |
| Milwaukee | 28 | 1545CST 1800CST | | | 0 | 0 | | Urban/Sml Stream Fld |



National Weather Service

Storm Data and Unusual Weather Phenomena



June 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | | Estimated Damage | | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|----------------------|---------|---------------------|-------|--------------------|
| | | | | | Killed | Injured | Property | Crops | |

WISCONSIN, Southeast

Green Lake County

| | | | | | | | | | |
|------------|----|---------|--|--|---|---|----|--|--------------------------|
| Green Lake | 28 | 1555CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
|------------|----|---------|--|--|---|---|----|--|--------------------------|

Washington County

| | | | | | | | | | |
|-----------|----|---------|--|--|---|---|--|--|---------------------|
| West Bend | 28 | 1905CST | | | 0 | 0 | | | Funnel Cloud |
|-----------|----|---------|--|--|---|---|--|--|---------------------|

Deep tropical moisture, pooled near a frontal boundary, resulted in two separate rounds of thunderstorms across southcentral and southeast Wisconsin. The 1st round consisted primarily of heavy rains and urban/small stream flooding. The 2nd round consisted of primarily large hail and heavy rains, although a wet microburst did generate powerful winds which levelled some large trees in Packwaukee (Marquette Co.) and Green Lake (Green Lake Co.).

In the couple hours just after 0000CST, small clusters of thunderstorms, moving slowly east at 15 mph, dumped heavy rains in scattered areas. Estimated rainfall totals based on WSR-88 Doppler radar were in the 1 to 2 inch range within 1 to 1.5 hours. The result was urban street flooding in Janesville (Rock Co.), Delavan (Walworth Co.), and Silver Lake (Kenosha Co.). Water was reported to be 4 to 8 inches deep on some roads. During the afternoon hours it was the same story when urban flooding was reported in Madison and Marshall (Dane Co.), and in the city of Milwaukee (Milwaukee Co.). At the NWS Forecast office 3SE of Sullivan (Jefferson Co.), 1.14 inches fell in 20 minutes! A total of 1.14 inches fell in 1 hour in Wauwatosa (Milwaukee Co.), and 1.42 inches in 30 minutes near the intersection of Capitol Drive and the Milwaukee River north of downtown Milwaukee



National Weather Service

Storm Data and Unusual Weather Phenomena



July 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Number of Persons Injured | Estimated Damage Property | Estimated Damage Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|

WISCONSIN, Southeast

Rock County

| | | | | | | | | | |
|------------|----|---------|--|--|---|---|----|--|-------------------|
| Janesville | 03 | 0300CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
|------------|----|---------|--|--|---|---|----|--|-------------------|

An isolated severe thunderstorm's downburst winds leveled large trees and damaged some patio furniture

WIZ046>047-051>052-056>060-062>072

Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha

| | | | | | | | | | |
|----|---------|--|--|--|---|---|--|--|----------------|
| 04 | 0300CST | | | | 0 | 0 | | | Excessive Heat |
| 05 | 2300CST | | | | | | | | |

A two day heat wave over southcentral and southeast Wisconsin pushed utility companies to the limit, but there were no brownouts due to the fact that it was a Holiday weekend. Nonetheless, the excessive heat and humidity resulted in 40 people being treated for heat-related illness at local hospitals. In general, overnight minimum air temperatures were in the mid to upper 70s while daytime maximum air temperatures were in the lower to mid 90s. Dewpoints in the mid to upper 70s resulted in minimum heat indices of 80 to 85 at night and maximum heat indices of 102 to 110 during the afternoon hours. A new record high minimum air temperature of 79 was set in Milwaukee on July 4th, breaking the old record of 78 set back in 1921. In Madison, the minimum air temperature of 77 on July 4th tied the old record of set back in 1897. Normal maximum air temperatures are 82 degrees for this time of the year. The excessive heat was a contributing factor in the death of 73 year old man who died on July 6th (classified as an indirect death).

Washington County

| | | | | | | | | | |
|-----------|----|---------|--|--|---|---|----|--|-------------------|
| West Bend | 05 | 2245CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
|-----------|----|---------|--|--|---|---|----|--|-------------------|

Fond Du Lac County

| | | | | | | | | | |
|-------------|----|---------|--|--|---|---|----|--|-------------------------|
| Fond Du Lac | 05 | 2255CST | | | 0 | 0 | 2K | | Thunderstorm Wind (G58) |
|-------------|----|---------|--|--|---|---|----|--|-------------------------|

Widely scattered severe thunderstorms generated powerful winds that leveled many large trees. Measured gusts peaked at 58 knots (67 mph) at the Fond du Lac Airport.

Fond Du Lac County

| | | | | | | | | | |
|------------------------|----|--------------------|--|--|---|---|----|--|-------------------|
| Peebles to St Peter | 08 | 2030CST 2040CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
|------------------------|----|--------------------|--|--|---|---|----|--|-------------------|

Sheboygan County

| | | | | | | | | | |
|-------------------------------|----|---------|--|--|---|---|----|--|-------------------|
| 7 N Beechwood to Beechwood | 08 | 2040CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
|-------------------------------|----|---------|--|--|---|---|----|--|-------------------|

Fond Du Lac County

| | | | | | | | | | |
|-------------|----|---------|--|--|---|---|-----|--|-----------|
| Fond Du Lac | 08 | 2059CST | | | 0 | 0 | 40K | | Lightning |
|-------------|----|---------|--|--|---|---|-----|--|-----------|

Fond Du Lac County

| | | | | | | | | | |
|------------------------------|----|--------------------|--|--|---|---|------|--|-------------------|
| Fond Du Lac to 2 N Dundee | 08 | 2104CST 2115CST | | | 0 | 0 | 155K | | Thunderstorm Wind |
|------------------------------|----|--------------------|--|--|---|---|------|--|-------------------|

Sheboygan County

| | | | | | | | | | |
|-----------|----|---------|--|--|---|---|-----|--|-------------------|
| Sheboygan | 08 | 2105CST | | | 0 | 0 | 40K | | Thunderstorm Wind |
|-----------|----|---------|--|--|---|---|-----|--|-------------------|

Sauk County

| | | | | | | | | | |
|----------------|----|---------|--|--|---|---|--|--|-------------|
| 3 SE Reedsburg | 08 | 2110CST | | | 0 | 0 | | | Hail (0.88) |
|----------------|----|---------|--|--|---|---|--|--|-------------|

Iowa County

| | | | | | | | | | |
|-----------|----|---------|--|--|---|---|----|--|-------------------|
| 2 N Clyde | 08 | 2125CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
|-----------|----|---------|--|--|---|---|----|--|-------------------|

Dodge County

| | | | | | | | | | |
|---------|----|---------|--|--|---|---|----|--|-------------------|
| Theresa | 08 | 2150CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
|---------|----|---------|--|--|---|---|----|--|-------------------|

Washington County

| | | | | | | | | | |
|------------|----|---------|--|--|---|---|----|--|-------------------|
| Germantown | 08 | 2200CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
|------------|----|---------|--|--|---|---|----|--|-------------------|

Waukesha County

| | | | | | | | | | |
|----------|----|---------|--|--|---|---|--|--|-------------|
| Waukesha | 09 | 0032CST | | | 0 | 0 | | | Hail (0.75) |
|----------|----|---------|--|--|---|---|--|--|-------------|



National Weather Service

Storm Data and Unusual Weather Phenomena



July 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Number of Persons Injured | Estimated Damage Property | Estimated Damage Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|

WISCONSIN, Southeast

Waukesha County

| | | | | | | | | | |
|------------------------|----|---------|--|--|---|---|----|--|-----------|
| New Berlin to Waukesha | 09 | 0100CST | | | 0 | 0 | 2K | | Lightning |
|------------------------|----|---------|--|--|---|---|----|--|-----------|

Waukesha County

| | | | | | | | | | |
|----------|----|--------------------|--|--|---|---|--|--|----------------------|
| Waukesha | 09 | 0100CST 0400CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
|----------|----|--------------------|--|--|---|---|--|--|----------------------|

Several clusters of thunderstorms, some severe, rumbled across southcentral and southeast Wisconsin during the evening hours of the 8th into the early morning hours of the 9th. Many large trees and power lines were knocked down by the powerful thunderstorm winds. Scattered large hail was also reported. A church and a car in Fond du Lac (Fond du Lac Co.) sustained considerable wind damage. A power transformer on Highway 23 in the city of Fond du Lac took a direct lightning hit. In Sheboygan (Sheboygan Co.), several large tents were leveled in a Rotary Club event in the city park. About 2000 customers were without electrical power in the Germantown area of southern Washington County due to lightning striking power poles. In addition, lightning struck a TV antenna on a New Berlin residence and damaged the home's TV, electrical sockets, and computer. Rainfall amounts of 1.5 to 2 inches in the city of Waukesha (Waukesha Co.) resulted in urban flooding in the pre-dawn hours. Several roads were blocked by water levels reaching 1 to 2 feet in low spots.

Dodge County

| | | | | | | | | | |
|----------|----|---------|--|--|---|---|-----|--|-----------|
| Mayville | 14 | 0430CST | | | 0 | 0 | 20K | | Lightning |
|----------|----|---------|--|--|---|---|-----|--|-----------|

Lightning struck the roof of a residential home, resulting in a roof/attic fire.

Dane County

| | | | | | | | | | |
|--------|----|--------------------|--|--|---|---|--|--|----------------------|
| Oregon | 17 | 0100CST 0800CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
|--------|----|--------------------|--|--|---|---|--|--|----------------------|

Several thunderstorms visited the Oregon area (Dane Co.) during the early morning hours. Total rainfall amounts were in the 5 to 6 inch range. Urban/small stream flooding was noted, but there was no damage. Many roads in the area had 1 to 2 feet of water covering them. Several were blocked by the high water levels. Local streams briefly exceeded their bankfull levels.

Iowa County

| | | | | | | | | | |
|---|----|---------|--|--|---|---|------|-----|-------------------|
| 4 WNW Blanchardville to 2 N Blanchardville | 20 | 1320CST | | | 0 | 0 | 300K | 50K | Thunderstorm Wind |
|---|----|---------|--|--|---|---|------|-----|-------------------|

Lafayette County

| | | | | | | | | | |
|------------|----|---------|--|--|---|---|--|--|-------------|
| 2 N Argyle | 20 | 1334CST | | | 0 | 0 | | | Hail (0.75) |
|------------|----|---------|--|--|---|---|--|--|-------------|

Green County

| | | | | | | | | | |
|------------------|----|---------|--|--|---|---|----|--|-------------------|
| 4 WNW New Glarus | 20 | 1340CST | | | 0 | 0 | 3K | | Thunderstorm Wind |
|------------------|----|---------|--|--|---|---|----|--|-------------------|

Green County

| | | | | | | | | | |
|----------------|----|--------------------|--|--|---|---|--|--|----------------------|
| 2 S Monticello | 20 | 1345CST 1600CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
|----------------|----|--------------------|--|--|---|---|--|--|----------------------|

Green County

| | | | | | | | | | |
|-----------------------------|----|--------------------|--|--|---|---|------|--|-------------------|
| 1 W Albany to 3 S Albany | 20 | 1355CST 1405CST | | | 0 | 0 | 225K | | Thunderstorm Wind |
|-----------------------------|----|--------------------|--|--|---|---|------|--|-------------------|

Rock County

| | | | | | | | | | |
|-----------------|----|---------|--|--|---|---|-----|--|-----------|
| 2 SE Janesville | 20 | 1413CST | | | 0 | 0 | 35K | | Lightning |
|-----------------|----|---------|--|--|---|---|-----|--|-----------|

Rock County

| | | | | | | | | | |
|-----------------------------------|----|--------------------|--|--|---|---|------|-----|-------------------|
| 2 SW Orfordville to 3 W Beloit | 20 | 1425CST 1440CST | | | 0 | 0 | 300K | 50K | Thunderstorm Wind |
|-----------------------------------|----|--------------------|--|--|---|---|------|-----|-------------------|

Rock County

| | | | | | | | | | |
|--------|----|--------------------|--|--|---|---|--|--|----------------------|
| Beloit | 20 | 1430CST 1600CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
|--------|----|--------------------|--|--|---|---|--|--|----------------------|

Dodge County

| | | | | | | | | | |
|------------|----|---------|--|--|---|---|-----|--|-------------------|
| Beaver Dam | 20 | 2130CST | | | 0 | 0 | 20K | | Thunderstorm Wind |
|------------|----|---------|--|--|---|---|-----|--|-------------------|



National Weather Service

Storm Data and Unusual Weather Phenomena



July 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Number of Persons Injured | Estimated Damage Property | Estimated Damage Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|

WISCONSIN, Southeast

Sauk County

| | | | | | | | | | |
|--------------|----|---------|--|--|---|---|----|--|------------------|
| 3 SW Baraboo | 20 | 2235CST | | | 0 | 0 | 8K | | Lightning |
|--------------|----|---------|--|--|---|---|----|--|------------------|

Milwaukee County

| | | | | | | | | | |
|------------|----|---------|--|--|---|---|-----|--|------------------|
| West Allis | 20 | 2320CST | | | 0 | 0 | 75K | | Lightning |
|------------|----|---------|--|--|---|---|-----|--|------------------|

Thunderstorms packing destructive winds, large hail, heavy rainfall, and lightning strikes pummelled southern Wisconsin in the afternoon and nighttime hours. The extreme southeast corner of Iowa County just west and north of Blanchardville experienced damaging winds. Three farms had significant damage. Altogether, 2 barns were destroyed, and one damaged. In addition, a corn crib, machine shed, and mechanical equipment were damaged. One of the farm's home sustained extensive damage after a large tree crashed through it. Eight calves were crushed in one of the destroyed barns, along with some hay crop. About 150 large trees were flattened. The severe storms continued southeast through Green county in the afternoon. About 100 livestock injuries/deaths occurred in Green County when 3 barns were destroyed by the powerful winds near Albany and a family of 3 were trapped in their vehicle due to fallen power line poles. 1.15 inches of rain fell in 15 minutes near New Glarus. The heavy rains resulted in urban/small stream flooding in and around Monticello (Green Co.). Water levels on some roads reach 6 to 12 inches. In neighbouring Lafayette county three-quarter inch hail was observed at Blanchardville and in southwest Rock county 3 farms sustained extensive damage to several buildings. A barn was downed west of Beloit and a few corn fields were flattened. Lightning struck a residential home in Rock county, destroying the garage and contents and causing heat/smoke damage to the home. After sunset lightning caused an attic fire near Baraboo in Sauk county and wind downed numerous trees near Beaver Dam in Dodge county, damaging the roofs of 6 homes. Lightning struck two buildings in West Allis (Waukesha Co.): a Fire Department building sustained communications and computer equipment damage; and a residential home had considerable fire damage to it roof/attic and 2nd story. In all, 10,000 customers were without power in southcentral and southeast Wisconsin due to the wind or lightning damaging power lines.

Sauk County

| | | | | | | | | | |
|-------------|----|--------------------|--|--|---|---|--|--|-----------------------------|
| Lake Delton | 20 | 1830CST 2000CST | | | 0 | 0 | | | Urban/Sml Stream Fld |
|-------------|----|--------------------|--|--|---|---|--|--|-----------------------------|

Dodge County

| | | | | | | | | | |
|---------------|----|--------------------|--|--|---|---|-----|--|--------------------|
| North Portion | 20 | 2130CST 2300CST | | | 0 | 0 | 20K | | Flash Flood |
|---------------|----|--------------------|--|--|---|---|-----|--|--------------------|

Columbia County

| | | | | | | | | | |
|----------------------------|----------|--------------------|--|--|---|---|----|--|-----------------------------|
| Poynette to Pardeeville | 20 21 | 2215CST 0100CST | | | 0 | 0 | 5K | | Urban/Sml Stream Fld |
|----------------------------|----------|--------------------|--|--|---|---|----|--|-----------------------------|

Waukesha County

| | | | | | | | | | |
|----------|----------|--------------------|--|--|---|---|-----|--|--------------------|
| Pewaukee | 20 21 | 2300CST 0200CST | | | 0 | 0 | 10K | | Flash Flood |
|----------|----------|--------------------|--|--|---|---|-----|--|--------------------|

Washington County

| | | | | | | | | | |
|------------------------------|----------|--------------------|--|--|---|---|-----|--|--------------------|
| Hartford to 5 E West Bend | 20 21 | 2325CST 0300CST | | | 0 | 0 | 30K | | Flash Flood |
|------------------------------|----------|--------------------|--|--|---|---|-----|--|--------------------|

Dodge County

| | | | | | | | | | |
|---------------|----|--------------------|--|--|---|---|-----|--|--------------------|
| North Portion | 21 | 0000CST 0400CST | | | 0 | 0 | 30K | | Flash Flood |
|---------------|----|--------------------|--|--|---|---|-----|--|--------------------|

Milwaukee County

| | | | | | | | | | |
|------------|----|--------------------|--|--|---|---|-----|--|--------------------|
| Countywide | 21 | 0030CST 0400CST | | | 0 | 0 | 40K | | Flash Flood |
|------------|----|--------------------|--|--|---|---|-----|--|--------------------|

A series of thunderstorms feeding off of a humid tropical-like airmass repeatedly trained across portions of southcentral and southeast Wisconsin during the late evening of the 20th into the early morning hours of the 21st. The net result was widespread flash flooding. There were numerous reports of shoulder washouts of roads and basement flooding. There were also many reports of stalled vehicles due to high water levels on many roads. One rainfall observer located 6 miles northeast of Beaver Dam in Dodge county reported 5.0 inches of rain between 2030CST and 2350CST on the 20th, with a total amount of 6.08 inches through 0620CST on the 21st.



National Weather Service

Storm Data and Unusual Weather Phenomena



July 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Injured | Estimated Damage Property | Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------|---------------------------------|-------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------|---------------------------------|-------|--------------------|

WISCONSIN, Southeast

Northern Dodge County was hit by 2 separate flash flood rounds. Numerous roads had standing water 3 to 5 feet deep and some country roads experienced shoulder washouts. A stretch of railroad tracks were washed out in Iron Ridge. Elsewhere, rainfall rates of 1 to 1.5 inches an hour were reported in Washington county, and at West Bend 4.10 inches was measured from 2300CST on the 20th to 0700CST on the 21st.

Similar rainfall rates were reported in Milwaukee county resulting in the Root River in the southern part of the county rising out of its banks. The Menomonee river in the Wauwatosa area (Milwaukee Co.) crested at 13.03 feet at 0145CST on the 21st, or 2.03 feet above flood stage. In the city of Milwaukee, a TV station reported 2.66 inches of rain between 2300CST on the 20th to 0100CST on the 21st. Law enforcement officials reported 1 to 2 feet of water on many roads, including the Interstate Highways, in and around the city of Milwaukee. In neighboring Waukesha County, 3 to 4 feet of standing water was reported on Interstate 94 near Pewaukee! Homes in Poynette and Pardeeville in Columbia county had homes with flooded basements, and 1 to 2 feet of standing water was reported on low spots of Highway 12 and other area roads near Lake Delton in Sauk County. Rainfall totals of 2 to 3 inches were noted around Lake Delton. Elsewhere, the Rock River at Waupan in Dodge County peaked 14 inches above its flood stage later on during the afternoon hours of the 21st.

WIZ057>060-063>064-066-069>072

Columbia - Dodge - Washington - Ozaukee - Dane - Jefferson - Milwaukee - Rock - Walworth - Racine - Kenosha

| | | | | | | | | | |
|-----------|----------------|--|--|--|--|--|--|--|-----------------------|
| 23 | 0200CST | | | | | | | | |
| 24 | 2000CST | | | | | | | | Excessive Heat |

Hot, muggy air settled over portions of southcentral and southeast Wisconsin in between rounds of thunderstorms. Early morning heat indices were around 80, and they rose to 105 to 110 during the afternoon hours. Maximum air temperatures in the afternoon were in the lower to middle 90s and afternoon dewpoints were in the lower to mid 70s. Nighttime minimum air temperatures were generally in the lower 70s. The heat and humidity forced a near record demand for electricity, resulting in brownouts that left about 5000 customers without power for several hours on the 23rd, and 7000 customers without power on the 24th.

| | | | | | | | | | |
|--------------------------|----|--------------------|--|--|---|---|-----|--|-------------------------|
| Green Lake County | | | | | | | | | |
| Markesan | 23 | 1245CST | | | 0 | 0 | | | Hail (0.75) |
| Washington County | | | | | | | | | |
| 2 NW Slinger | 23 | 1300CST | | | 0 | 0 | | | Funnel Cloud |
| Dane County | | | | | | | | | |
| Madison | 23 | 1320CST | | | 0 | 1 | | | Lightning |
| Dodge County | | | | | | | | | |
| Beaver Dam to Lowell | 23 | 1334CST 1352CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
| Dane County | | | | | | | | | |
| Cottage Grove | 23 | 1340CST | | | 0 | 1 | | | Lightning |
| Columbia County | | | | | | | | | |
| Rio | 23 | 1345CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
| Jefferson County | | | | | | | | | |
| 1 S Watertown | 23 | 1408CST | | | 0 | 0 | | | Thunderstorm Wind (G52) |
| Columbia County | | | | | | | | | |
| 5 W Columbus | 23 | 1430CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Dane County | | | | | | | | | |
| Madison Truax Arprt | 23 | 1439CST | | | 0 | 0 | | | Hail (0.75) |
| Dane County | | | | | | | | | |
| Belleville | 23 | 1440CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Dodge County | | | | | | | | | |
| Richwood | 23 | 1440CST | | | 0 | 0 | | | Hail (0.75) |
| Green County | | | | | | | | | |
| 5 E Dayton to Brodhead | 23 | 1445CST 1500CST | | | 0 | 0 | 25K | | Thunderstorm Wind |



National Weather Service

Storm Data and Unusual Weather Phenomena



July 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Number of Persons Injured | Estimated Damage Property | Estimated Damage Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|

WISCONSIN, Southeast

| | | | | | | | | | |
|----------------------------|----|--------------------|--|--|---|---|------|--|-------------------------|
| Jefferson County | | | | | | | | | |
| Ft Atkinson | 23 | 1449CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
| Ozaukee County | | | | | | | | | |
| Grafton | 23 | 1455CST | | | 0 | 0 | 5K | | Thunderstorm Wind |
| Rock County | | | | | | | | | |
| 3 W Union | 23 | 1455CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Rock County | | | | | | | | | |
| Janesville | 23 | 1510CST | | | 0 | 0 | 1.5K | | Thunderstorm Wind |
| Dane County | | | | | | | | | |
| 3 NW Stoughton | 23 | 1521CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Milwaukee County | | | | | | | | | |
| Milwaukee | 23 | 1530CST | | | 0 | 0 | 30K | | Thunderstorm Wind |
| Racine County | | | | | | | | | |
| Waterford | 23 | 1533CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
| Walworth County | | | | | | | | | |
| Walworth to Lake Geneva | 23 | 1536CST 1550CST | | | 0 | 0 | 2K | | Thunderstorm Wind (G57) |
| Kenosha County | | | | | | | | | |
| 1 SW Twin Lakes | 23 | 1555CST | | | 0 | 0 | 3K | | Thunderstorm Wind |
| Rock County | | | | | | | | | |
| Newville | 23 | 1555CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Racine County | | | | | | | | | |
| North Bay | 23 | 1615CST | | | 0 | 0 | 3K | | Thunderstorm Wind |

Scattered pre-dawn thunderstorms and a daytime mixture of temperatures in the lower 90s and dewpoints in the lower to mid 70s primed the atmosphere for a round of severe weather across southcentral and southeast Wisconsin. During the afternoon hours of the 23rd several short lines of severe thunderstorms moved east/southeast at 35 mph dumping large hail and torrential rains, and producing damaging wet microburst winds. Numerous large trees were blown over and many power lines were knocked over. A measured peak wind gust of 57 knots (66 mph) was recorded in Lake Geneva (Walworth Co.). Large hail (7/8 inch) was reported along with damaging winds that raked the Beaver Dam to Lowell area of Dodge County. In Madison (Dane Co.), lightning injured a woman, and also struck and injured a boy on a bike in Cottage Grove. A farm garage building in northeast Green County was blown down by the powerful thunderstorm winds. In the city of Milwaukee (Milwaukee Co.) 1 home and 3 cars sustained wind damage.

| | | | | | | | | | |
|--------------------|----|--------------------|--|--|---|---|-----|--|-------------------|
| Dane County | | | | | | | | | |
| Madison | 25 | 1832CST | | | 0 | 0 | 15K | | Thunderstorm Wind |
| Dane County | | | | | | | | | |
| Madison | 25 | 1845CST 2030CST | | | 0 | 0 | 15K | | Flash Flood |
| Rock County | | | | | | | | | |
| Edgerton | 25 | 1845CST 1945CST | | | 0 | 0 | 1K | | Thunderstorm Wind |
| Rock County | | | | | | | | | |
| 3.5 S Clinton | 25 | 1910CST | | | 0 | 0 | 1K | | Thunderstorm Wind |

An isolated cluster of severe thunderstorms developed north of the Madison area (Dane Co.) and proceeded to move southeast at about 15 mph. The storms produced wet microbursts that levelled trees and stop signs on the southside of Madison. Two vehicles were damaged by tree branch debris. It was the same story in Rock County where trees were toppled by powerful winds in Edgerton and south of Clinton.

The slow moving thunderstorms also dumped torrential rains at the rate of 1 to 2 inches per hour. The net result was a brief flash



National Weather Service

Storm Data and Unusual Weather Phenomena



July 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Number of Persons Injured | Estimated Damage Property | Estimated Damage Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|

WISCONSIN, Southeast

flood on the southside of Madison. Several roads were closed due to water levels of 3 to 5 feet. Some erosion of roadside banks was noted and several cars stalled in the deep water. Unofficial rainfall observations indicate that 4 inches of rain fell in less than 2 hours from Madison to Stoughton (Dane Co.).

Sauk County

3 NE Baraboo

26 0250CST 0 0 30K **Thunderstorm Wind**

An isolated severe thunderstorm's powerful downburst winds tore off 3/4ths of a farm home's roof and levelled many trees

Columbia County

3 SE Portage to
Wyocena

26 0300CST
0310CST 0 0 5K 50K **Thunderstorm Wind**

The Sauk County severe storm pulsed up once again and flattened many large trees and some corn crop.

Lafayette County

5 N Darlington

28 0910CST 0 0 **Hail (1.00)**

WIZ046>047-051>052-
056>060-062>072

Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha

29 0800CST 8 0 **Excessive Heat**
31 0600CST

The most intense heat wave since the killer heat wave of July 13-14, 1995, struck southcentral and southeast Wisconsin at the end of July, 1999. This most recent heat wave was responsible for directly killing 8 people (heat was the major cause of death), and indirectly killing (heat was a contributing factor) an additional 6 people. Most of these deaths occurred in or near the city of Milwaukee (Milwaukee Co.), possibly due to the fact that Milwaukee registered a minimum air temperatures of 70 degree or higher for the last 11 days of July. In addition, at least 150 people were treated at local hospitals for heat-related exhaustion or dehydration.

Meteorologically, high pressure over the southeast U.S. pushed hot, muggy air into southern Wisconsin. Additional moisture was added to the atmosphere by evaporation of moisture from the Mid West corn belt. In fact, the dewpoint at Milwaukee Mitchell Field reached 82 degrees at 1200CST on the 30th, tying the record high dewpoint set back on July 4, 1977. Kenosha (Kenosha Co.) also hit 82 for a maximum dewpoint reading, while Madison (Dane Co.) came in with 79. On July 29th, maximum air temperatures ranged from 93 at the Wisconsin Dells (Columbia Co.) to 99 at Mt. Mary College in Milwaukee County. Minimum air temperatures for the morning of July 30th ranged from 68 in Juneau (Dodge Co.) to 76 at the Charmany Farm in Madison. Maximum air temperatures for July 30th ranged from 95 in Juneau to 104 in Kenosha. The 104 degrees in Kenosha established a new all-time record for that location! Milwaukee topped out at 95 and 99 for the 29th and 30th, respectively, while Madison topped out at 93 and 97. Minimum air temperatures for the morning on the 31st were in the lower 70s.

Thanks to the high dewpoint levels, heat index values during the afternoon hours on the 29th and 30th ranged from 110 to 115. However, on the 30th, the city of Fond du Lac (Fond du Lac Co.) had heat indices of 116 to 119 for 3 hours, the city of Racine (Racine Co.) had heat indices of 115 to 119 for 2 hours, and the city of Kenosha had readings of 115 to 125 for 6 hours. Minimum heat indices during the nighttime hours were around 80.

In Milwaukee County, the 4 direct heat deaths were: male 45, male 54, male 66, and female 73, all in their home or apartment. There were 6 other indirect heat-related deaths in Milwaukee County; again, all in their home. Other direct heat-related deaths were: in the city of Fond du Lac /male 65/, in Madison /male 53/, in the city of Racine /male 59/, and in the city of Waukesha (Waukesha Co.) /female 79/, all in their home. M65PH, M53PH, F79PH, M45PH, M54PH, M66PH, F73PH, M59PH



National Weather Service

Storm Data and Unusual Weather Phenomena



July 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | | Estimated Damage | | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|----------------------|---------|---------------------|-------|--------------------|
| | | | | | Killed | Injured | Property | Crops | |

WISCONSIN, Southeast

Rock County

| | | | | | | | | | |
|---------------|-----------|----------------|--|--|----------|----------|-----------|--|--------------------------|
| Beloit | 29 | 0940CST | | | 0 | 0 | 3K | | Thunderstorm Wind |
|---------------|-----------|----------------|--|--|----------|----------|-----------|--|--------------------------|

An isolated severe thunderstorm generated strong winds which pushed over a few large trees in and near Beloit (Rock Co.).

Fond Du Lac County

| | | | | | | | | | |
|--------------------|-----------|----------------------------|--|--|----------|----------|-----------|--|--------------------------------|
| Fond Du Lac | 30 | 2127CST 2130CST | | | 0 | 0 | 3K | | Thunderstorm Wind (G60) |
|--------------------|-----------|----------------------------|--|--|----------|----------|-----------|--|--------------------------------|

An isolated thunderstorm generated a wet microburst that levelled some large trees. Peak wind gust was measured.

Sheboygan County

| | | | | | | | | | |
|---|-----------|----------------------------|--|--|----------|----------|------------|--|--------------------------|
| Greenbush to Sheboygan Falls | 30 | 2315CST 2325CST | | | 0 | 0 | 20K | | Thunderstorm Wind |
|---|-----------|----------------------------|--|--|----------|----------|------------|--|--------------------------|

An eastward moving line of thunderstorms in central Wisconsin generated a well-defined (on WSR-88D imagery) gust front which pushed some 5 to 15 miles ahead of the surface position of the associated rain. The counties of Sauk, Marquette, Green Lake, and Fond du Lac reported wind gusts of 35 to 43 knots (40 to 50 mph), however the outflow winds increased in strength after the gust front pushed into Sheboygan County. Many large trees and some power lines were pushed over from the Greenbush to Sheboygan Falls area. Peak winds gusts in Sheboygan county were estimated to be about 50 to 60 knots based on the damage reports.



National Weather Service

Storm Data and Unusual Weather Phenomena



August 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | | Estimated Damage | | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|----------------------|---------|---------------------|-------|--------------------|
| | | | | | Killed | Injured | Property | Crops | |

WISCONSIN, Southeast

Ozaukee County

| | | | | | | | | | |
|----------------------|----|---------|--|--|---|---|-----|--|-----------|
| 1 NW Port Washington | 10 | 0020CST | | | 0 | 0 | 10K | | Lightning |
|----------------------|----|---------|--|--|---|---|-----|--|-----------|

Milwaukee County

| | | | | | | | | | |
|-----------|----|---------|--|--|---|---|--|--|-------------|
| Milwaukee | 10 | 0040CST | | | 0 | 0 | | | Hail (0.75) |
|-----------|----|---------|--|--|---|---|--|--|-------------|

Waukesha County

| | | | | | | | | | |
|--------------|----|---------|--|--|---|---|--|--|-------------|
| 1 SE Muskego | 10 | 0100CST | | | 0 | 0 | | | Hail (1.00) |
|--------------|----|---------|--|--|---|---|--|--|-------------|

Racine County

| | | | | | | | | | |
|----------------|----|---------|--|--|---|---|--|--|-------------|
| 4 NE Waterford | 10 | 0115CST | | | 0 | 0 | | | Hail (0.75) |
|----------------|----|---------|--|--|---|---|--|--|-------------|

A line of thunderstorms, associated with a cold front, pushed east/southeast across southeast Wisconsin at about 35 knots. Some of the cells became severe and dumped large hail. A bolt of lightning struck a residential home's roof and started an attic fire.



National Weather Service

Storm Data and Unusual Weather Phenomena



September 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | | Estimated Damage | | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|----------------------|---------|---------------------|-------|--------------------|
| | | | | | Killed | Injured | Property | Crops | |

WISCONSIN, Southeast

Sheboygan County

| | | | | | | | | | |
|---------------|----|---------|--|--|---|---|-----|--|------------------|
| 4 NW Plymouth | 19 | 1603CST | | | 0 | 0 | 25K | | Lightning |
|---------------|----|---------|--|--|---|---|-----|--|------------------|

Rock County

| | | | | | | | | | |
|-------------|----|---------|--|--|---|---|--|--|--------------------|
| 4 NE Milton | 19 | 1620CST | | | 0 | 0 | | | Hail (1.00) |
|-------------|----|---------|--|--|---|---|--|--|--------------------|

Jefferson County

| | | | | | | | | | |
|------------|----|---------|--|--|---|---|----|--|--------------------------|
| Farmington | 19 | 1630CST | | | 0 | 0 | 2K | | Thunderstorm Wind |
|------------|----|---------|--|--|---|---|----|--|--------------------------|

Scattered thunderstorms, some with powerful winds and large hail, pushed through southcentral and southeast Wisconsin. Large trees and some power poles were pushed over in Farmington (Jefferson Co.). Lightning struck the roof of a home northwest of the village of Plymouth, resulting in a fire that heavily damaged the roof and upper story of the home.



National Weather Service

Storm Data and Unusual Weather Phenomena



November 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Number of Persons Injured | Estimated Damage Property | Estimated Damage Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|

WISCONSIN, Southeast

WIZ046>047-051>052-056>060-067>072 **Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

| | | | | | | | | | |
|-----------|----------------|--|--|----------|----------|--|--|--|----------------------|
| 08 | 1200CST | | | | | | | | |
| 10 | 0200CST | | | 0 | 0 | | | | Record Warmth |

Unreasonably warm air was pumped into southcentral and southeast Wisconsin for a couple days on south to southwest winds, resulting in several new record high minimums and record maximums. A surface high pressure anchored over the Ohio River Valley kept skies mostly clear over southern Wisconsin

On November 8th, Madison peaked at 74 at 1352CST, breaking the old record of 68 set back in 1915. Milwaukee peaked at 73 degrees at 1400CST, breaking the old record of 70 set back in 1931. Lake Geneva peaked at 73, which was a new daily maximum record. Other maximum temperatures across southcentral and southeast Wisconsin ranged from 70 at Janesville to 78 at Ft. Atkinson.

On November 9th, a minimum of 57 in Madison tied the old daily record high minimum set back in 1931. On this day, Madison peaked at 73 at 1352CST, breaking the old record of 70 set back in 1931. Milwaukee peaked at 75 at 1429CST, breaking the old record of 72 set back in 1931. The reading of 75 became the warmest so late in the season. Lake Geneva peaked at 74, setting a new daily maximum record. Maximum temperatures elsewhere across southcentral and southeast Wisconsin ranged from 72 at Wisconsin Dells to 76 at Hales Corner in Milwaukee County, while calendar day lows were in the lower to middle 50's. Normal highs and lows for this time of the season across southcentral and southeast Wisconsin are 45 to 50, and lower to middle 30s, respectively.

Early on November 10th, Milwaukee peaked at 65 at 0005CST, breaking the old record of 64 set back in 1949. Maximum temperatures elsewhere ranged from 58 at Kenosha to 66 at the NWS Office (MKX) 3 miles southeast of Sullivan in Jefferson County.

Washington County
Slinger

| | | | | | | | | | |
|-----------|----------------|--|--|----------|----------|--|--|--|--------------------|
| 10 | 1545CST | | | | | | | | |
| | | | | 0 | 0 | | | | Hail (0.75) |

Washington County
4 SW West Bend to
3 S Newburg

| | | | | | | | | | |
|-----------|----------------|--|--|----------|----------|--|--|--|--------------------|
| 10 | 1635CST | | | | | | | | |
| | 1650CST | | | 0 | 0 | | | | Hail (1.00) |

Scattered late-season thunderstorms developed over southeast Wisconsin and dumped hail varying from 1/4 inch to 1 inch in diameter. The hail covered the ground white from east of Big Cedar Lake east to the county line.

The storms were associated with a strong, mid-level vorticity maxima over Minnesota which moved east/southeast across southern Wisconsin. The pocket of cold air aloft set up steep lapse rates. The storms were post cold-frontal...and eyewitness reports suggested a southwestward development of the thunderstorm cells as they moved east. Rainfall amounts were .25 to 1.00 inches.

WIZ052-058>059-064>065-068>070

Sheboygan - Dodge - Washington - Jefferson - Waukesha - Green - Rock - Walworth

| | | | | | | | | | |
|-----------|----------------|--|--|----------|----------|--|--|--|------------|
| 13 | 0000CST | | | | | | | | |
| | 0700CST | | | 0 | 0 | | | | Fog |

Extremely dense fog developed overnight as a surface high pressure ridge moved southeast across southern Wisconsin. Earlier in the day, light rain fell across the area, which set the stage for moisture evaporation. Visibilities were reduced to zero to below 1/4 mile. Newspaper reports indicated several vehicle accidents due to poor driving visibilities.



National Weather Service

Storm Data and Unusual Weather Phenomena



November 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons Killed | Number of Persons Injured | Estimated Damage Property | Estimated Damage Crops | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|
|----------|------|----------------------------|---------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|--------------------|

WISCONSIN, Southeast

WIZ046>047

Marquette - Green Lake

| | | | | | | | | | |
|-----------|----------------------------|--|--|----------|----------|--|--|--|------------|
| 13 | 0100CST 0700CST | | | 0 | 0 | | | | Fog |
|-----------|----------------------------|--|--|----------|----------|--|--|--|------------|

Extremely dense fog developed overnight as a surface high pressure ridge moved southeast across southern Wisconsin. Earlier in the day, light rain fell across the area, which set the stage for moisture evaporation. Visibilities were reduced to zero to below 1/4 mile. Newspaper reports indicated several vehicle accidents due to poor driving visibilities.

**WIZ046>047-051>052-
056>060-067>072**

**Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Lafayette -
Green - Rock - Walworth - Racine - Kenosha**

| | | | | | | | | | |
|-----------|----------------------------|--|--|----------|----------|--|--|--|----------------------|
| 13 | 1300CST 1600CST | | | 0 | 0 | | | | Record Warmth |
|-----------|----------------------------|--|--|----------|----------|--|--|--|----------------------|

Southwest to west surface winds pulled warm air back into Wisconsin under full sunshine, resulting in near -record or record maximum temperatures. Madison peaked at 69 at 1449CST, breaking the old record of 68 set back in 1909. At 1504CST, Milwaukee tied the old record of 69 set back in 1989. Elsewhere in southcentral and southeast Wisconsin maximum temperatures ranged from the upper 60s to lower 70s, and undoubtedly several other new daily maximum temperatures were set



National Weather Service

Storm Data and Unusual Weather Phenomena



December 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | Estimated Damage | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|----------------------|---------------------|--------------------|
| | | | | | Killed | Injured | Property Crops |

WISCONSIN, Southeast

WIZ063-066

Dane - Milwaukee

01 0001CST
16 2359CST

0 0

Other

Madison (Dane Co.) tied the old record of 280 consecutive days with maximum temperatures above 32 degrees set back in 1981 (February 13 through November 19). From March 11, 1999 through December 15, 1999, the maximum temperature was above the freezing mark. December 15th was the latest date for this type of consecutive streak to end. On December 15th, Madison recorded 0.9 inches of snow, making the 15th the latest day for measurable snow. The previous latest date for measurable snow was November 28, 1994.

Milwaukee (Milwaukee Co.) set a new record for the date of the latest trace of snow...December 5, 1999. The previous latest date for a trace snowfall was November 27, 1994. Milwaukee's streak of maximum temperatures above 32 degrees ended on December 15, 1999 after starting on March 11th. This streak of 281 days was the second longest streak. The record streak was 283 days from March 2nd through December 9, 1994. However, the end date of December 15th in 1999 became the latest ending date for this type of streak.

Other locations in southcentral and southeast Wisconsin set new latest trace snow records. Janesville (Rock Co.) didn't record a trace until December 22, 1999, breaking the old record by 6 days. West Bend (Washington Co.), didn't record a measurable snowfall until December 14th, the latest in the year since 1971.

Inland lakes didn't have an ice cover until the 2nd or 3rd week of December, which is very late for southern Wisconsin. Above average monthly temperatures notched in September, October, November, and December.

WIZ064>066

Jefferson - Waukesha - Milwaukee

03 0100CST
04 1400CST

0 0

Fog

WIZ070>072

Walworth - Racine - Kenosha

03 0300CST
04 1500CST

0 0

Fog

WIZ051>052-057>059-063

Fond Du Lac - Sheboygan - Columbia - Dodge - Washington - Dane

03 0400CST
04 1000CST

0 0

Fog

WIZ062-067>069

Iowa - Lafayette - Green - Rock

03 2130CST
04 1330CST

0 0

Fog

Extremely dense fog blanketed southcentral and southeast Wisconsin, resulting in at least 250 motor vehicle. Three people perished in accidents (on Highway 14 near Oregon, Dane Co., on Interstate 94 near Farmington, Jefferson Co., and in Green County). All 3 deaths were indirectly related to the dense fog). At least 40 people were injured (indirect injury). Most airline flights in and out of Madison, Milwaukee, and other airports were either delayed or cancelled. The excess atmospheric moisture formed a frost layer of black ice on some road surfaces. Visibilities were reduced to zero to 1/4 mile. Rain fell earlier in the day on Dec 3rd and the winds were nearly calm during the fog period. Many schools opened 2 hour late.

WIZ063-069>072

Dane - Rock - Walworth - Racine - Kenosha

12 2200CST
13 2200CST

0 0

Fog

WIZ051>052-058>059-064>065-067>068

Fond Du Lac - Sheboygan - Dodge - Washington - Jefferson - Waukesha - Lafayette - Green

13 0400CST
2359CST

0 0

Fog



National Weather Service

Storm Data and Unusual Weather Phenomena



December 1999

| Location | Date | Time Local/ Standard | Path Length (Miles) | Path Width (Yards) | Number of Persons | | Estimated Damage | | Character of Storm |
|----------|------|----------------------------|---------------------------|--------------------------|----------------------|---------|---------------------|-------|--------------------|
| | | | | | Killed | Injured | Property | Crops | |

WISCONSIN, Southeast

WIZ046-056>057-062 **Marquette - Sauk - Columbia - Iowa**

| | | | | | | | | | |
|-----------|----------------|--|--|--|----------|----------|--|--|------------|
| 13 | 1400CST | | | | 0 | 0 | | | Fog |
| 14 | 0500CST | | | | | | | | |

Extremely dense fog blanketed southcentral and southeast Wisconsin, resulting in at least 100 motor vehicle accidents and 30 injuries (indirectly related to fog). Visibilities were reduced to zero to 1/4 mile. Many flights were delayed or cancelled at airports.

WIZ063

| | | | | | | | | | |
|-------------|----------------|--|--|--|----------|----------|-------------|--|---------------------|
| Dane | | | | | 0 | 0 | 100K | | Strong Winds |
| 26 | 1200CST | | | | | | | | |
| 27 | 0600CST | | | | | | | | |

Stong gusty northwest winds of 40 to 50 mph on Dec 26th across southern Wisconsin eventually caused a 30-foot rip in the 62,000 square-foot inflatable vinyl roof of the Madison Urban Links Golf Dome (Dane Co.), about 4 miles southwest of the capital square. The roof collapsed at 0530CST on Dec 27th based on indoor monitors. No one was in the building at the time. Measured peak wind gusts on December 26th were: 47 mph at Sun Prairie (Dane Co.), 46 mph at Westfield (Marquette Co.), and 3SE Sullivan (Jefferson Co.), and 43 mph at Fond du Lac (Fond du Lac Co.) and Milwaukee (Milwaukee Co.).